

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

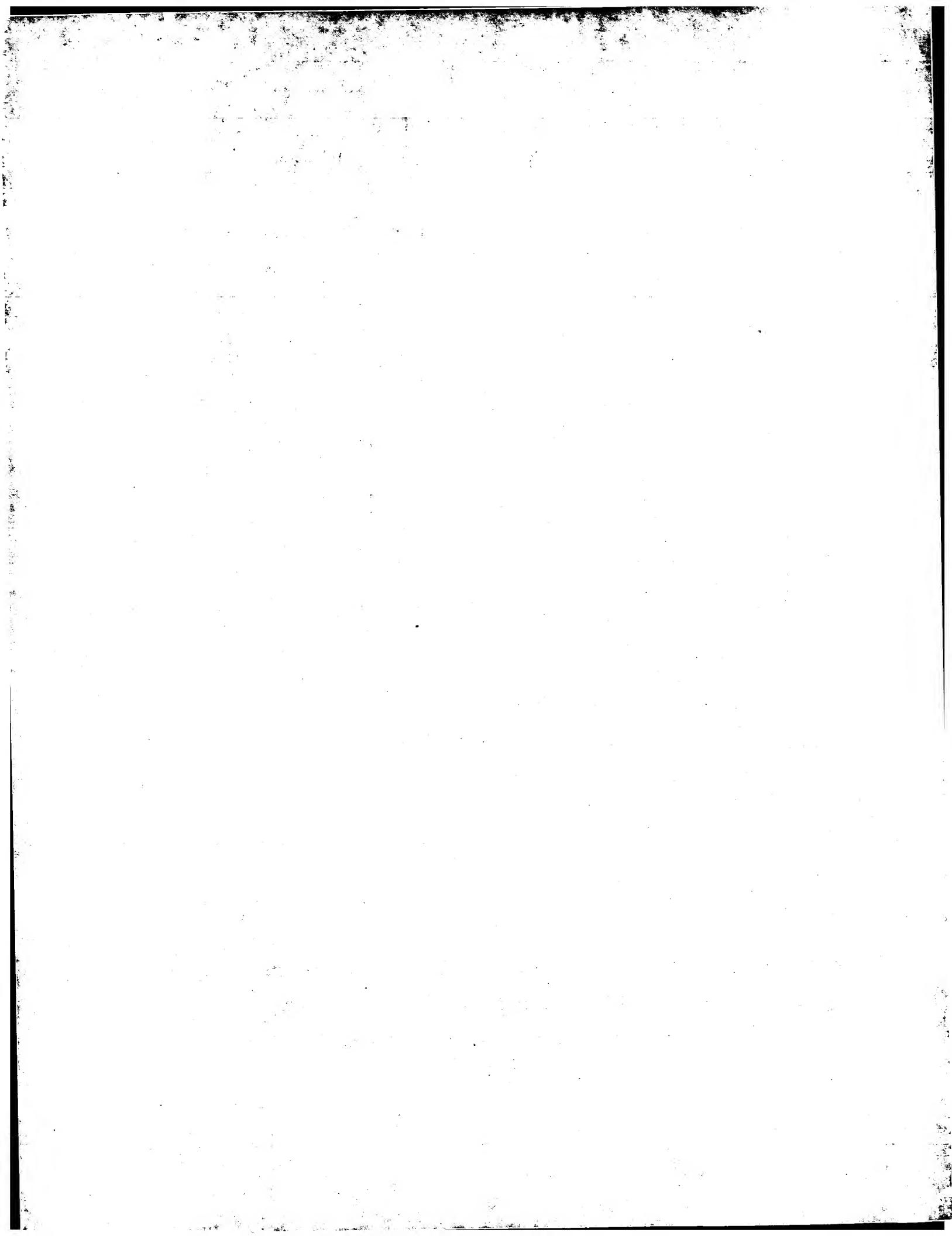
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



JP 08-196,778
[Claims only, as requested]

(80)
T-2

OK
4/99

Agent:

Hisao Komori,
patent attorney

[There are no amendments to this patent.]

* * *

Claims

1. A laundry net, characterized by a hollow body formed by sewing together pieces of solid, honeycombed woven fabric and providing opening and closing sections at the longitudinal end faces of this hollow body.

2. The laundry net of Claim 1, characterized in that the interior of the aforementioned hollow body is divided into multiple sections by flat surfaces that consist of the solid, honeycombed, woven fabric, and the aforementioned opening and closing sections are provided in such a manner that they correspond to each of the sectioned parts.

* * *

[There are no amendments to this patent.]

Abstract

Objective

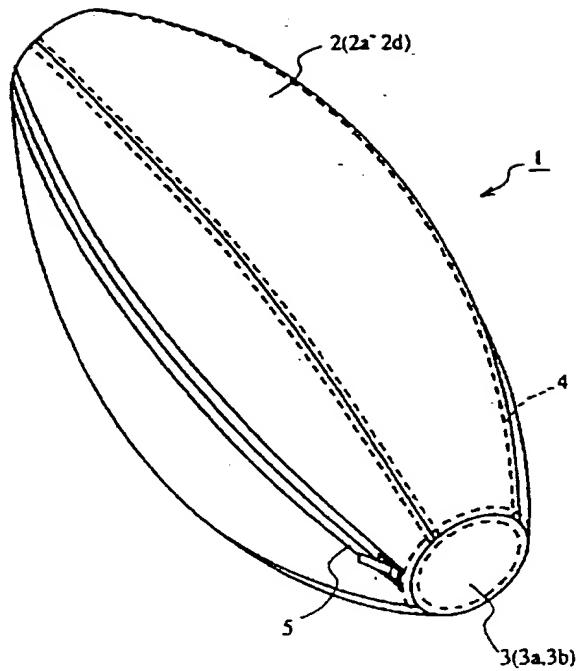
To sufficiently buffer the external force on the laundry contained inside [a laundry net] and thereby to securely prevent damage to the laundry contained inside.

Constitution

Four sheets of elliptic, solid, honeycombed, woven fabric (2 (2a-2d)) and two sheets of small, round, solid honeycombed, woven fabric 3 (3a, 3b) are sewn into a rugby ball shape which is a hollow sphere. The center of one of the four sheets of elliptic, solid, honeycombed, woven fabric (2) is cut in the longitudinal direction. On this cut part, a fastener (5) that constitutes an opening and closing section is installed.

Effect

The contact force, which occurs when the laundry net, which moves in the wash tub by means of the water flow, contacts the inner wall of the wash tub, is buffered by the elastic deformation of the solid, honeycombed, woven fabric constituting the laundry net.



Claims

1. A laundry net, characterized by a hollow body formed by sewing together pieces of solid, honeycombed woven fabric and providing opening and closing sections at the longitudinal end faces of this hollow body.
2. The laundry net of Claim 1, characterized in that the interior of the aforementioned hollow body is divided into multiple sections by flat surfaces that consist of the solid,

honeycombed, woven fabric, and the aforementioned opening and closing sections are provided in such a manner that they correspond to each of the sectioned parts.

Detailed explanation of the invention

[0001]

Industrial application field

The present invention pertains to a laundry net which contains laundry washed inside a washer.

[0002]

Prior art

When laundry such as clothing is washed in a wash tub of a washer, it is sometimes deformed by the water flow in the wash tub. Thus, previously, a laundry net has been used to prevent deformation at the time of washing. Such a laundry net is prepared by sewing a net-shaped woven fabric into a bag and by forming an opening and closing section with a fastener, etc., at one part. When the laundry is washed in such a laundry net, the wash water will penetrate through the net-shaped woven fabric to the laundry, and at the same time, the laundry in the laundry net will not become entwined with the other laundry. Therefore, by containing the laundry in a laundry net, the laundry can be washed along with other laundry in a washer without causing any deformation.

[0003]

Problems to be solved by the invention

However, a conventional laundry net could not sufficiently buffer the external force on the laundry contained inside. There were the following problems such that damage to the laundry contained inside could not be securely prevented: The laundry contained inside may contact the inner wall of the wash tub because of the water flow, or it may become entwined with or rubbed against the other laundry. Particularly in a jet washer, which is the mainstream for home use in Japan, a spiral water flow is generated, and the laundry is intertwined severely or rubbed against each other in the wash tub. Thus, using a conventional laundry net, the laundry is easily damaged, and delicate clothing with a dry cleaning instructions could not be washed without being damaged.

[0004]

Previously, there was no laundry net available that could contain more than one piece of laundry without them damaging one another.

[0005]

The objective of the present invention is to offer a laundry net that can sufficiently buffer external forces on the laundry

contained inside and which can securely prevent the laundry contained inside from being damaged.

[0006]

It is also to offer a laundry net that can contain more than one piece of laundry without damaging them during washing.

[0007]

Means to solve the problems

The invention according to Claim 1 is characterized by the fact that a hollow body is formed by sewing solid, honeycombed, woven fabric, and an opening and closing section in the longitudinal direction is provided on the side face of this hollow body.

[0008]

The invention according to Claim 2 is characterized by the fact that the inside of the aforementioned hollow body is divided into multiple sections by flat surfaces consisting of solid, honeycombed, woven fabric, and the aforementioned opening and closing section is provided corresponding to each divided section.

[0009]

Function

In the invention according to Claim 1, the laundry can be contained inside the hollow body composed of solid, honeycombed, woven fabric from the opening and closing section. The solid, honeycombed, woven fabric is comprised by holding two sheets of front and back mesh-shaped woven fabric with a constant gap between them with middle yarn. It has a constant thickness in the front and back direction. With this thickness, the buffer function is realized. Therefore, the external force on the laundry contained inside the hollow body is certainly buffered by the solid, honeycombed, woven fabric. The wash water, on the other hand, easily penetrates through the solid, honeycombed, woven fabric to the laundry.

[0010]

In the invention according to Claim 2, the inside of the hollow body is divided into multiple sections by the solid, honeycombed, woven fabric, and opening and closing sections are formed corresponding to each of the divided sections. Therefore, more than one piece of laundry can be stored inside the hollow body from each of the opening and closing sections. Several pieces of laundry contained [in the laundry net] are separated from one another by means of the solid, honeycombed, woven fabric. Therefore, each piece of laundry will not become entwined with or rubbed against one another and will not damage the other laundry.

[0011]

Application examples

Figure 1 illustrates a laundry net representing an application example of the invention according to Claim 1. The laundry net (1) is comprised by sewing four sheets of elliptic, solid, honeycombed, woven fabric (2) (2a-2d) and two pieces of small, round, solid, honeycombed woven fabric (3) (3a, 3b) into the shape of a rugby ball, which is a hollow, elliptical sphere. The elliptic, solid, honeycombed, woven fabric (2) and the small, round, solid, honeycombed, woven fabric (3) are sewn with bias tapes. As a material for such bias tapes (4), for instance, polyester is used. The center of one of the four elliptic, solid, honeycombed, woven fabrics (2) is cut in the longitudinal direction. On this cut part, a fastener (5) constituting the opening and closing section is installed.

[0012]

As illustrated in Figure 2, for the solid, honeycombed, woven fabric (2) and (3), for instance, one comprised by holding mesh-shaped surface body (11) and back face body (12) made of nylon with a gap between them by means of middle yarn (13) made of polyester so that the thickness will be approximately 4.5 mm may be used. The solid, honeycombed, woven fabric (2) and (3) has elastic force in the direction when the surface body (11) and the back face body (12) approach each other by means of elastic deformation of the middle yarn (13). That is, when the surface

body (11) and the back face body (12) are compressed on the solid, honeycombed, woven fabric (2) or (3), the middle yarn (13) will have elastic deformation as illustrated in Figure 3, and the thickness of the solid, honeycombed, woven fabric (2) and (3) will decrease. When the compressive force on the surface body (11) and the back face body (12) is removed, the middle yarn (13) will be restored to the state illustrated in Figure 2, and the thickness of the solid, honeycombed, woven fabric (2) and (3) will also return to the original state. Therefore, the solid, honeycombed, woven fabric (2) and (3) has the function of buffering an external force by elastic deformation in the thickness direction when external force is added.

[0013]

In a laundry net (1) constituted as mentioned above, the laundry is contained inside the laundry net (1) by opening the fastener (5), and the net is put in the wash tub of a washer after closing the fastener. In general, during washing, the washer generates water flow in the wash tub, agitates the laundry put in the laundry net so as to be in contact with the wash water, and decomposes and removes the dirt on the laundry by means of laundry detergent dissolved in the wash water. The laundry net (1) put in a wash tub is agitated by means of water flow during the washing. It will not only be in contact with, and slide against the inner wall of the wash tub, but also it will be in contact or become entwined with the other laundry.

[0014]

At this time, as the laundry contained in the laundry net (1) is covered by the solid, honeycombed, woven fabric (2) and (3), it will not be in direct contact with the inner wall of the wash tub or the other laundry. Thus, the laundry contained in the laundry net (1) will not be damaged from being in contact, entwined with or rubbed against the inner wall or the other laundry. The contact force when the laundry net (1), which moves in the wash tub by means of water flow contacts the inner wall of the wash tub will be buffered by the elastic deformation of the solid, honeycombed, woven fabric (2) or (3) constituting the laundry net (1). Thus, this contact force will not directly act on the laundry contained in the laundry net (1). The laundry contained in the laundry net (1) thus will not have significant deformation generated. Besides, the wash water easily penetrates through the mesh-shaped, solid, honeycombed, woven fabric (2) and (3) to the laundry contained in the laundry net (1). The washing function will not be worsened. Therefore, delicate clothing, etc., which has dry cleaning instructions on it, may be washed without being damaged.

[0015]

Because the appearance of the laundry net (1) of the present application example is made into the shape of a rugby ball, irregular rotation of the laundry net (1) inside the wash tub by means of water flow is made easy, thus washing can be done smoothly.

[0016]

The opening and closing section of the laundry net (1) may also be constituted of a means other than a fastener.

[0017]

Figure 4 illustrates a laundry net representing an application example of the invention according to Claim 2. The laundry net (21) is comprised by sewing four sheets of elliptic, solid, honeycombed, woven fabric (22) (22a-22d) and two sheets of small, round, solid, honeycombed, woven fabric (23) (23a, 23b) into the shape of a rugby ball, which is a hollow elliptical sphere. The inside is divided into four sections by the solid, honeycombed, woven fabric (24) (24a, 24b). The solid, honeycombed, woven fabric (24) constitutes a flat surface containing the long axis of the laundry net (21), which is a hollow, elliptical sphere, inside the laundry net (21). Both solid, honeycombed, woven fabric (22) and (23) can be a material which is the same as the solid, honeycombed, woven fabric (2) and (3) of the aforementioned laundry net (1). When the solid, honeycombed, woven fabric (22) and (23) is sewn, bias tapes (25) such as those in the aforementioned laundry net (1) may also be used.

[0018]

The solid, honeycombed, woven fabric (24) has an elliptic shape similar to the solid, honeycombed, woven fabric (22). As illustrated in Figure 5, after it is folded at a right angle at

the longer diameter part, the ridge lines (27) of the respective folded parts are sewn together. Furthermore, as illustrated in Figure 4, the rim parts (28) of this solid, honeycombed, woven fabric (24) are sewn to the longer diameter part of the respective central parts of four sheets of solid, honeycombed, woven fabric (22). Each of the four sheets of solid, honeycombed, woven fabric (22) is connected by means of the fasteners (26) (26a-26d) which constitute the opening and closing sections. Therefore, four fasteners (26) are positioned at the center of each divided part in the laundry net, (21) which is divided by the solid, honeycombed, woven fabric (24).

[0019]

With the aforementioned constitution, more than one piece of laundry can be contained in the laundry net (21) by opening part or all of the four fasteners (26). Thus, more than one piece of laundry, including delicate clothing with dry cleaning instructions on it, may be washed at the same time without being damaged. Therefore, there is the advantage that handling several pieces of laundry will be easier.

[0020]

The inside of the laundry net (21) may be divided into not only four but any number of sections. Such number may be increased or decreased by changing the number of fasteners installed corresponding to the number of divided sections. As illustrated in Figure 6, the marginal parts of the solid, honeycombed, woven fabric (24) dividing the inside of the laundry

net (21) may also be attached to the inner circumferential face of the solid, honeycombed, woven fabric (22) in a manner that it can be freely attached or detached using, for instance, so-called Magic tape, etc. In this manner, corresponding to the size or quantity of the laundry contained in the laundry net (21), the number of sections in the laundry net (21) may be changed from four, illustrated in Figure 6 (A), to three or two, illustrated in the Figure 6(B) or (C).

[0021]

Effect of the invention

For the invention according to Claim 1, the contact force when a laundry net, which moves in a wash tub by means of water flow, contacts the inner wall of a wash tub can be buffered by the elastic deformation of solid, honeycombed, woven fabric which constitutes the laundry net, so that this contact force will not directly act on the laundry contained in the laundry net. Thus, the laundry contained in the laundry net will not be deformed significantly, and delicate clothing with dry cleaning instructions on it, etc., can be washed without being damaged.

[0022]

For the invention according to Claim 2, several pieces of laundry can be washed at the same time without causing significant deformation or damage, thus handling of several pieces of laundry will be easier.

Brief description of the figures

Figure 1 shows a laundry net which is an application example of the invention according to Claim 1.

Figure 2 is a diagram illustrating a structure of solid, honeycombed, woven fabric which constitutes the aforementioned laundry net.

Figure 3 is a diagram illustrating a deformed state of the solid, honeycombed woven fabric which constitutes the aforementioned laundry net.

Figure 4 is an appearance of a laundry net which is an application example of the invention according to Claim 2.

Figure 5 is a diagram illustrating the solid, honeycombed, woven fabric which divides the inside of the aforementioned laundry net.

Figure 6 is a diagram illustrating a structure of a laundry net which pertains to another application example of the invention according to Claim 2.

Explanation of symbols

1, 21	Laundry net
2, 3, 22, 23, 24	Solid, honeycombed, woven fabric
5, 25	Fastener

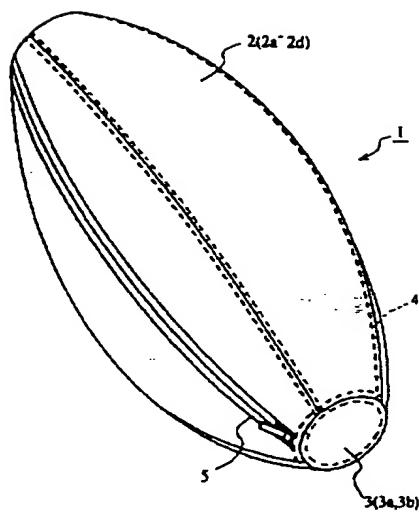


Figure 1

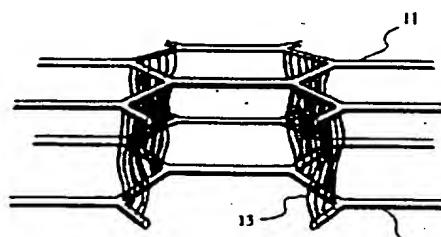


Figure 2

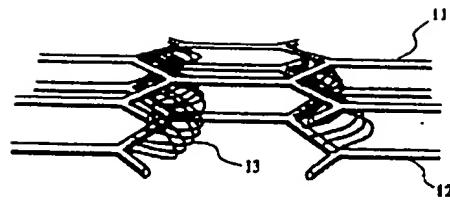


Figure 3

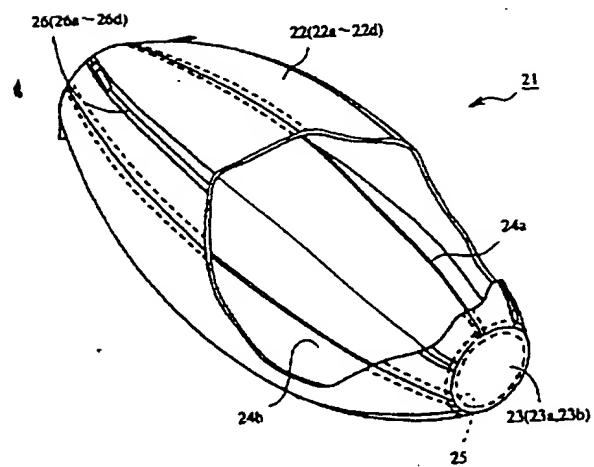


Figure 4

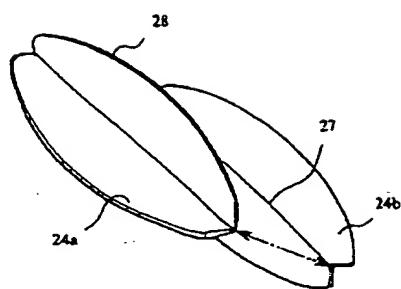


Figure 5

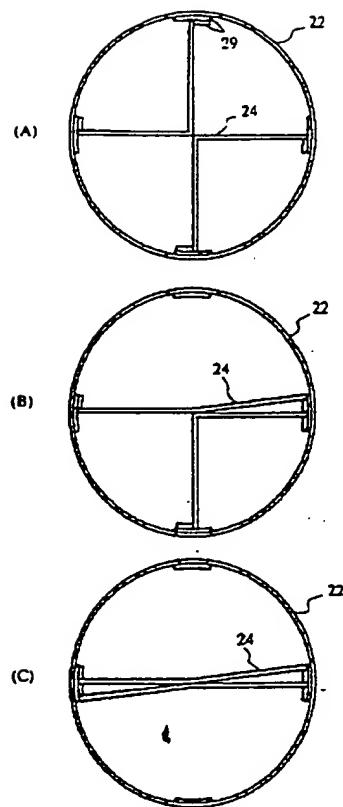


Figure 6

